(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 29 July 2004 (29.07.2004)

PCT

(10) International Publication Number WO 2004/062808 A1

(51) International Patent Classification⁷: C02F 11/02

B02C 13/22,

(21) International Application Number:

PCT/FI2003/000983

(22) International Filing Date:

29 December 2003 (29.12.2003)

(25) Filing Language:

Finnish

(26) Publication Language:

English

(30) Priority Data: 20030058

15 January 2003 (15.01.2003) F

(71) Applicant (for all designated States except US): FRACTI-VATOR OY [FI/FI]; Näsilinnankatu 27 B 14, FIN-33200 Tampere (FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): PALM, Carl-Olof [FI/FI]; Nahkurinpiha 3 as. 20, FIN-20100 Turku (FI).

(74) Agent: ÖHMAN, Ann-Marie; c/o Hormos Medical Corporation, Itäinen Pitkäkatu 4 B, FIN-20520 Turku (FI).

(81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

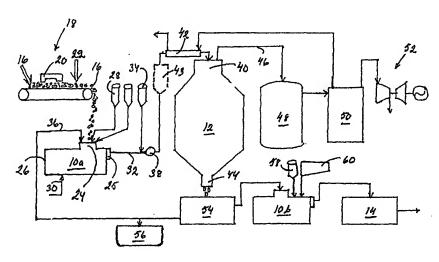
(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND DEVICE FOR DISINTEGRATION OF ORGANIC MATERIAL AND USE OF THE DEVICE



(57) Abstract: A method and apparatus for biological and/or chemical decomposition of waste containing organic matter. The method comprises waste pretreatment in which the waste is fragmented and homogenised in a pretreatment apparatus (10a, 10b) operating on the principle of a multi-ring double action impact mill. The apparatus consists of either two rotors (62, 64) or a rotor adn stator disposed inside a housing (26), which rotors adn/or stator are equipped with blades (1a,b,c,... 2a,b,c,...) having impact surfaces (a', b', c', ...), and which form one or more, typically at least two rings (1, 2, 3, ...) coaxial with the rotor. The waste is fed into the housing through the hub of rings formed by the blades, from where the waste is arranged to travel by the effect of a rotor or rotors, to the outer ring of the ring (7) formed by the outermost blades, and further to the discharge opening (25, 27') in at the outer ring.

EST AVAILABLE COPY